

2003 MASER

Round 11

Toss-up Questions

1. The phosphoric acid type is most common, but molten carbonate versions have been successfully used in Italy and Japan. Able to operate silently and heat water or air with their waste heat, their "fuel reformers" let them run on any hydrocarbon fuel. Made from two electrodes surrounding an electrolyte, power is generated when oxygen passes the cathode and hydrogen passing the anode is split with a catalyst. A proton moves through the electrolyte and an electron creates a current on its way to the cathode. FTP, name these energy-generating devices that emit only water vapor.

Fuel Cells

2. He teaches his children tolerance by saying that "you never really understand a person...until you climb into his skin and walk around in it." After the confrontation with Mrs. Dubose, he tells his son that courage means fighting "when you know you're licked before you begin" and manages to keep the jury debating longer than anyone expected. This widower's conscience and individualism compel him to defend Tom Robinson against a rape charge. FTP, name this role model for Eric Douglas who is Jem and Scout's father in To Kill a Mockingbird.

Atticus Finch

3. Joan Crawford and Ginger Rogers both got their starts winning competitions organized around it. Sometimes said identical to the 500-year-old branle or claimed African in origin, it began on a coastal island before 1903. The Ziegfield Follies used it in a 1922 movie and Elida Webb lied about inventing it. Similar to the Mashed Potato and replaced in its day by the Black Bottom, it is characterized by kicking the heels and repeated knee-bending. FTP, name this Jazz Age dance named after a South Carolina city.

The Charleston

4. Raised in the Salvation Army, a Shanghai madam invited her to work as a whore during her visit there. When young, she was a fierce advocate of evolution, but found religion through her husband and began her preaching career at Albert Hall. Once claiming she had been kidnapped to hide an affair with a married man, she preached the world's first radio sermon. FTP, name this female evangelist who built the Angelus Temple in Los Angeles and created the Foursquare gospel.

Aimee Semple McPherson

5. The solar wind causes much to be lost, something essential for planetary formation. Its time rate of change is equal to torque and its value for a particle is found by the equation $r \times p$. It is found for an object in a circular orbit by multiplying mass, velocity and distance from the object and, to maintain its value, an orbiting object speeds up when closer, leading to Kepler's Law of Areas. FTP, name this measure of an object's tendency to keep spinning, the magnitude and direction of which are strictly conserved in isolated systems.

Angular Momentum

6. Set in Westminster Abbey, a lute with broken string may stand for Lutheranism, whose founder wrote the chorale "Komm heiliger Geist" shown in the middle. Owned by Charles Le Brun and long thought to portray Thomas Wyatt and friend, its painter had already depicted the royal astronomer. One figure wears a purple frock and rests his hand on a Bible, while the other is dressed in ermine and black velvet along with the Order of St. Michel and a smaller version of the emblem at bottom. FTP, name this Hans Holbein the Younger work showing two Frenchmen at Henry VIII's court and an elongated skull.

The Ambassadors

7. Although, in his doctorate, this man accused the Jews of collaborating with the Nazis and suggested that the Holocaust was exaggerated, he was the architect of the Oslo peace accords. He co-founded Fatah with Yasser Arafat, but has attempted to negotiate with the Israeli left in the past. Called Abu Mazen, FTP, name this man who is the first Palestinian prime minister.

Mahmoud Abbas

8. One has a boy in the form of a bird killing the stepmother who murdered him and fed him to his father, while another has a king's daughter confessing her troubles to a stove. They were almost all related by educated, middle-class people and horrible punishments were often invented, although incest and much family violence were omitted. The name is a misnomer because they are genuine folktales, the more famous of which are "The Frog Prince," "Rumpelstiltskin," and "Hansel and Gretel." FTP, name these stories collected by two German philologists.

Grimm's Fairy Tales

9. Whitefish, a coral and a sea anemone are all practitioners, as well as some shrimp, scorpions and centipedes. Gregory Pincus induced it in rabbit eggs, but it has never happened for humans. Often facultative, it probably allows new areas to be colonized quickly and some of its products are clones, but genetic rearrangement can take place. The norm for rotifers, it is common in insects and bees and ants produce workers by it. FTP, name this phenomenon in which an ovum develops without fertilization.

Parthenogenesis (Prompt on virgin birth because this isn't a religion question.)

10. On this day, children may go door-to-door for treats and it celebrated on the fourteenth day of Adar. Hamantash is served, the Megillah is read and, according to the Talmud, Jews are supposed to get wasted. Plays are performed and noisemakers are used everytime the name Haman is said. FTP, what is this Jewish holiday that celebrates the rescue of the Jews by Esther from an evil plot to kill them?

Purim

11. He produced a bastard during his twenty-one year affair with Madeleine Brown, but his administration's only scandal came when his chief of staff, Walter Jenkins, had sex with a man in a YMCA bathroom. He oversaw passage of the Twenty-fourth Amendment and his most famous project involved passing the Mass Transit and Head Start Acts after he declared "unconditional war on poverty." FTP, name this president who championed the Great Society and succeeded Kennedy.

Lyndon Baines Johnson

12. Plato's Philebus said it is exact and measurable, as colors, notes and shapes have an intrinsic type that produces pure pleasure. Hutcheson thought objects rich in this appeal to man's innate sense of it by "uniformity in variety" and Augustine said it is a manifestation of the divine. Kant thought judgements of it had "universal validity" and distinguished the free variety that is valued only for appearance, not for particular qualities, from the dependent type. FTP, name this aesthetic concept held to be "in the eye of the beholder."

Beauty

13. Its temperature dependence means fish suffocate in boiled water because increased temperature makes the water insoluble for air. It grows more and more inaccurate as concentrations and partial pressures rise and those solutions obeying it are of the ideal dilute type. It is most familiar as the reason nitrogen expands when divers go from high pressure depths to the surface, causing the bends. FTP, name this law stating concentration of a gas in solution is directly proportional to pressure of that gas above solution.

Henry's Law

14. Psychologists suggested it is a symbolic vagina and stepping inside is a return to the womb. Promoted with demonstrations on California beaches, the original was made of bamboo and used in Australian gym classes. It was banned in Tokyo after a girl died chasing one into traffic and the end of its popularity nearly destroyed Wham-O, which continued selling the Shoop Shoop noisemaker version for years and introduced the striped, candy-scented type in 1982. FTP, name this polyethylene ring spun on the hips.

Hula Hoop

15. The author's first book done after fleeing his country, the characters dislike each other because they find each other's passions meaningless. Long

monologues on movie plots are constantly interrupted, as are political diatribes, but the window dresser's narratives come to be welcomed as distraction from persecution. In the end, Molina is shot and Valentin dreams of movie plots while being tortured to death. FTP, name this Manuel Puig novel and movie about a homosexual and a Communist sharing love in a prison cell.

Kiss of the Spider Woman or El Beso de la Mujer Arana

16. Its construction saw the first use of safety nets in a major building project. Its chief engineer, Joseph Strauss, had lots of experience, but modest technical background. Built in open sea, it required huge cofferdams and its massive Pennsylvania-made towers were sent through the Panama Canal. Actually coated in International Orange paint, it was the world's longest suspension bridge when finished. FTP, name this structure that spans the entrance to San Francisco Bay.

The Golden Gate Bridge

17. It is usually illegal when based on race, age or sex, but provides optimal resource allocation and can be concealed by bundling. The increasing proportion of goods with high fixed costs and low marginal costs, such as computer software, will probably make it more common. Technology also makes it easier, as seen in Coca Cola's attempts to create vending machines that measure temperature and adjust accordingly. FTP, name this practice used by airlines to determine fares, charging different amounts to several customers for the same product.

Price Discrimination

18. Returning several times to aid friends trapped in the Glenrowan Hotel, he was shot in the legs, arms, and groin more than twenty times before being caught. Although he was self-educated, he wrote eloquently about the injustices perpetrated against him and his family in his Jerilderie Letter. Robbing banks and holding several towns hostage in Victoria and New South Wales, FTP, who is this Australian outlaw and national hero?

Ned Kelly

19. It was created in 1973 when Bob Metcalfe designed its standards and cabling method to hook an Alto computer to a printer. Because its devices are joined together by a single segment, new components can be added without modifying old parts. Nodes connected to a segment send out information as frames and, although some networks now stretch many miles, most occupy single buildings. FTP, name this most popular network technology in the world.

Ethernet

20. The first battle in this war occurred when the Mato Grosso province was invaded. The only naval fight occurred at Riachuelo when Francisco Solano Lopez ordered his navy to take control of the ParanVel River. Caused by the blockade of Montevideo by Brazil, FTP, name this war that pitted Paraguay

against Uruguay, Brazil, and Argentina and led to the death of 20 to 50% of the Paraguayan population.

War of the Triple Alliance

21. The crude man catching otters is not a suitable companion, but neither are dour men the best friends. The craft embraced by the main character is the best compromise between action and contemplation because something is accomplished even while relaxing in a natural setting, explicating its theme of finding the "middle path" that Puritans, Royalists and other extremists miss. What plot there is consists of three men discussing the joys of their sports, and Auceps being left behind while Venator and Piscator head for the water. FTP, name this guide to fishing by Isaac Walton.

The Compleat Angler

22. Author of a novel entitled Michael, his widely-circulated articles included "What Does America Really Want?" and "The Morals of the Rich." He once tried to engineer the expulsion of Hitler from the Nazi party, but called for total war in February of 1943 and was put in charge of the Reich Cultural Chamber. FTP name this clubfooted Nazi propaganda minister who committed suicide in Hitler's bunker.

Joseph Goebbels

23. Charles Barkley and Capt. Robert Gray were among the first to see it and Lt. Charles Wilkes of the Navy suggested the government acquire it. There is a shipyard at Bremerton and it was described as the best harbor north of San Francisco. Vancouver explored this body of water in 1792 and Juan de Fuca straight separates it from the Pacific. FTP, what is this sound near Seattle?

Puget sound

24. Its main character is presumably welcomed into Heaven after his archangel brother sends him off with a trumpet solo. Mourned by everyone except a young Marine, he became a great athlete in prison and his wife, Rosa Lee, ceased to love him when a bastard was brought into her house. Envyng Cory for his baseball talent, the garbage collector at its center refuses his son a scholarship and sees him storm out their Pittsburgh home. FTP, name this drama about Tony Maxson, written by August Wilson.

Fences

Bonus Questions

1. FTPE, answer the following about the Boer War.

This was the leader of Cape Colony at the time of the Boer War. He has a scholarship named for him at Oxford.

Cecil Rhodes

This is the name of the military raid organized by Rhodes that precipitated the Boer War

Jameson Raid

For 5 each, name the two Boer colonies.

Orange Free State and the Transvaal

2. 5-10-15, answer these questions about a movement in art.

5-This Late Renaissance movement involved excessive adherence to High Renaissance models and artificial movement and poses.

Mannerism

10-This Parmigianino work depicts a virgin and child with small, oval heads and bodies that appear to have been stretched on the rack.

Madonna with the Long Neck

15-Court painter to the Grand Duke of Tuscany, this Mannerist is famous for Portrait of a Young Man and his masterpiece, Venus, Cupid, Folly and Time.

Bronzino or Agnolo di Cosimo

3. Answer these questions about sleep FTPE.

This type of sleep is characterized by high-frequency brainwave activity, dreams and its namesake activity.

REM or Rapid Eye Movement Sleep

This is the deepest sleep, with deep breathing, low blood pressure and high amplitude brainwaves. People awakened from it are very disoriented.

Stage 4

The ventrolateral preoptic area of this part of the brain has been proposed as the body's "sleep switch." It is better known for its role in food intake regulation.

Hypothalamus

4. Name these knights of the Round Table from Le Morte D'Arthur FTPE.

This favorite of Guinevere was proclaimed Christendom's greatest warrior before he eloped with her to France.

Sir Launcelot

This son of Launcelot and Elaine took the chair left vacant for him before his birth and became an Eastern king after retrieving the Grail.

Sir Galahad

This traitorous son of King Bagmedamus captured Guinevere for his wife and was killed by Launcelot.

Sir Meligrance

5. Answer these questions about animal reproduction FTPE.

This process produces four haploid gametes from a single diploid parent.

Meiosis

This term refers to egg formation and development.

Oogenesis

This double-layered stage of embryonic development is a hollow sac opening at the blastopore.

Gastrula

6. FFPE and an extra five for all correct, name the country from the name of the legislative body

Althing

Iceland

Diet or Kokkai

Japan

Cortes

Spain

Sansad

India

Knesset

Israel

7. Name the following Muslim terms FTPE.

This is the tax imposed on non-Muslims in Muslim-controlled areas.

Jizya

This is the religious law that several countries employ. Cities in northern Nigeria have caused controversy by trying to stone a woman under this legal system.

Sharia

This is the first pillar of Islam and is the profession of faith.

Shahadah

8. Answer the following about these black firsts FTPE.

Elected in Cleveland, he was the first black mayor of a major city in America.

Carl Stokes

He was the first black senator, elected from Mississippi in 1870.

Hiram Revels

He was the first black general in the US Army.

Benjamin O. Davis, Sr.

9. Name the following famous ships that weren't too lucky FTPE.

This was the cargo ship that sank during a storm on Lake Superior on Nov. 10, 1975. It was made famous in a Gordon Lightfoot song.

Edmund Fitzgerald

This Italian liner sank off Nantucket on July 26, 1956. It was named after a Doge of Genoa.

Andrea Doria

This was the Swedish ship that collided with the Andrea Doria. It was named after a city in its home country.

Stockholm

10. They're hot, they're black and they're gay. 5-10-15, identify these well-known homosexuality-themed works by African-Americans.

5-Alice Walker wrote this work about the life of Celie. She stays with her lesbian lover, Shug Avery, because "men look like frogs...no matter how you kiss'em."

The Color Purple

10-This James Baldwin work has Parisian expatriate David leave his wife, Hella, and their children for the carnal pleasures of the titular love nest.

Giovanni's Room

15-Idiot slave Rat Korga has a love affair with diplomat Marc Dyeth and saves a world from destruction. Author Samuel Delany also wrote the appropriately titled Black Gay Man.

Stars in My Pocket Like Grains of Sand

11. 5-10-15, name these types of bonds.

5-This bond is created by electron transfer from a metal to a nonmetal.

Ionic Bond

10-The sideways overlap of two parallel p orbitals forms this kind of bond.

Pi Bond

15-This type of covalent bond forms between two atoms of element 16 and makes much of proteins' structures.

Disulfide Bond or Bridge or SS Bond

12. Name these skyscrapers from descriptions FTPE.

Tallest building in the world for twenty years, this Chicago landmark was built by Skidmore, Owings and Merrill and was the first "bundled tubes" construction.

The Sears Tower

Counting its spire, this Toronto broadcasting center is the world's highest building. It is copyrighted and images may not be used without permission.

The CN Tower

Its owner is one of the world's two private issuers of currency and this creation of Foster Associates appears there. The floors are suspended from pairs of masts and the form is revealed through aluminum cladding.

The Hongkong and Shanghai Bank

13. This year marks the 50th anniversary of the first climbing of Mt. Everest by Sir Edmund Hilary. FTPE, answer the following about that climb and Mt. Everest. Name the Sherpa guide who helped Hilary scale the mountain.

Tenzig Norgay

Within 500 ft., give the height of Everest.

Ans: 29, 035 (28, 535-29, 535)

The frozen body of this man who may have reached the summit in 1924 was found in 1999.

George L. Mallory

14. Answer these questions about an author FTPE.

This "splay-footed" dramatist learned his art as a Roman soldier and once ended up laboring in a mill after losing all his money. He wrote Aulularia and Amphitryo.

Titus Maccius Plautus

Plautus wrote in this style exemplified by Menander. It featured stock characters and a large chorus.

New Comedy

The stupid, swaggering soldier of this Plautus work reappeared most famously as Falstaff. The original, Pyrgopolynices, is fooled by his subordinates.

Miles Gloriosus

15. Name the losing major party candidate from the election year FTPE.

1928

Alfred Smith

1952

Adlai Stevenson

1876

Samuel Tilden

16. Answer these questions about a famous fiction series FSNP.

10-Spanning three volumes and 400 years, it tells of future scientists creating repositories of learning to survive impending chaos.

The Foundation Trilogy

5-Name the author of The Foundation Trilogy.

Isaac Asimov

15-This scientist has created psychohistory, a mathematical model of human behavior. Developer of the project, his image often appears to give advice.

Hari Seldon

17. Identify these insect orders given members FTPE.

Cockroaches, Praying Mantids

Dictyoptera

Ants, Bees and Wasps

Hymenoptera

True Flies

Diptera

18. 30-20-10, name the author from works.

30-"Lavish are the Dead," The Youth Who Came Late

20-The Flaming Green Tree, The Silent Cry

10-A Personal Matter; Bud-Nipping, Lamb-Shooting

Kenzaburo Oe

19. Identify these varieties of philosophical thought about justice FTPE.

This type involves the appropriateness and timing of punishment.

Retributive

This type deals with unbiased and consistent application of principles, not the meaning of the principles.

Formal

This type deals with the fairness of resource allocation and dispersion.

Distributive

20. Answer these related questions from physics FTPE.

Still theoretical and named for its ability to exist even at -273C, it is a product of "virtual" photons jumping in and out of existence in quantum fluctuations.

Zero Point Energy

This effect probably results from forces of the phantom particles that create zero point energy. It is an attraction created between parallel uncharged plates.

Casimir Effect

In this effect, zero point fluctuations are seen on a minute scale as 2s electrons and corresponding spectral lines are shifted upwards in their orbits.

Lamb Shift

21. 5-10-15, answer the following about the Russian revolution.

5-The Bolsheviks forced Russia to adopt this commonly used calendar in 1918.

Gregorian

10-His name means "debauched one" and he was seen as a healer and man of God by the czar and czarina.

Rasputin

15-This is the city in Russia in the Urals where Nicholas and his family were shot.

Yekaterinburg

22. 5-10-15, answer these questions about a composer and his works.

5-Composing from age five, his Simple Symphony is made from works done between nine and fourteen. He created the opera Peter Grimes and the Fantasy Quartet.

Benjamin Britten

10-This Britten work for an educational film is a series of variations on a Henry Purcell rondo. Each instrument is spotlighted before all take part in a final fugue.

The Young Person's Guide to the Orchestra

15-This unusually structured suite celebrating a season is usually called a symphony. It has choral settings of 14 poems and incorporates lines from Sumer Is Icumen In.

Spring Symphony

23. Answer the following on a 5-10-15 basis.

5-Name this art which was the chemistry of the middle ages and had the objective of trying to turn the base metals into gold.

Alchemy

10-This is the legendary substance that would turn metal to gold.

Philosopher's Stone

15-The greatest alchemist, this Swiss held that salt, sulfur, and mercury were the elements of compound bodies.

Phillipus Paracelsus

24. FTPE, answer these questions about motion.

These first-order ordinary differential equations are highly symmetrical and used to describe motion of a mechanical system.

Hamilton's Equations

These equations of a French scientist are equivalent to Hamilton's, but work when only a classical description is necessary.

Lagrange's Equations

Classical equations of motion are deduced from this principle which can be used to find minimum trajectory for a system S.

Least-action Principle